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Altmetrics: Meaning, Role and Its Importance in Libraries

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Abstract

Altmetrics or Social web-based metrics is used as tool for measuring research impact beyond the scientific communities to measure the impact of academic research. The Idea being the web is not just used by academics and therefore data from the web about academic research may be used as method of measuring the wider impact of that research. Altmetrics extract data from wider range of platforms from bibliographic services like Mendeley, Researchgate or Academia to general social networks like Facebook, Google+, Twitter, Wikipedia, Youtube and Plenty more sources from the web. The present study explores the meaning, sources, categories, pros & cons of altmetrics and its importance in libraries. Altmetrics is relatively new field but in a way extension of bibliometric studies. Its importance cannot be underplayed due to the limitations of others bibliometrics like peer-review, citation counting and journal average citation. Altmetrics is considered to be the alternative metrics and to be used as complementary with the other traditional metrics. Librarian can play a pivotal role in training and promoting of various altmetric tools amongst the student, teacher and researchers to enhance their article-level metrics and relevance in the current research landscape.

Keywords: Social web, Altmetrics, metrics, Article Level metrics (ALM).

1. Introduction

Development of Communication technology especially internet web social networking or "Social Web" revolutionised the way the scholars and researchers interact with the web for the dissemination of their works. Due to the slow nature of the traditional methods or metrics like peer-review, citation counting and a journal average citation led them to explore new avenues. There are number of studies supporting the fact that researchers are using the social web to explore other research works, connect with fellow researchers and promote their works. (Gonzalez Fernández Villavicencio, Nieves *et al.*, 2014). Thus emergence of alternative metrics i.e. Altmetrics came into existence.

The word "Altmetrics" was coined by Jason Priem, an information scientist in 2010. To understand Altmetrics one need to refer "Altmetrics Manifesto" a comprehensive introductory text on the subject authored by Jason Priem, Dario Taraborelli, Paul Groth, and Cameron Neylon. It explains how the research impact of traditional publications and non-traditional publications like Grey literature, blogs, datasets and other types of scholarly publication can be gauged by measuring the number of downloads, shares, saves,

views etc. with traditional metrics like journal impact factors and citation counts.

Priem, Groth and Taraborelli (2012) defines Altmetrics as "the study and use of scholarly impact measures based on activity in online tools and environments. Galloway, Pease and Rauh (2015) define "Altmetrics are the tools that help track a scholar's influence and relevance beyond traditional citation metrics." In simple words Altmetrics are the new metrics based on the social web providing real-time data, feedback, interactions which can be quantified quickly. It measures usage statistics based on downloads, views, peer-review, citations, storage, links, bookmarks and conversations.

2. Objectives

The Objectives of this Paper are

- To know the sources used for obtaining altmetrics data.
- To understand various categories of altmetrics.
- To find out how altmetrics data are collected.
- To know the various examples of Altmetrics.
- To understand the pros and cons of Altmetrics on scholarly communication.

- vi) To understand the role of librarian in promotion of Almetrics on Academics.

3. Research Methodology

This paper is more theoretical in nature. The approach of the research is exploratory in nature, which constitutes a secondary source. The research is based on secondary data, which includes compilation of research articles. This Research paper is more of informative and suggestive in nature, much more research and exploration needed in this field.

The Sources used for obtaining altimetry's Data are as Follows:

- Social networking sites like Facebook, Whats App, YouTube
- Academic networks like Academia.edu, Research Gate, Slide share
- Micro-blogging or short message services like Twitter, Instagram, etc.
- Blogs (Word Press, Blogger)
- Academic Bookmarking platforms like Mendeley, Cite Ulike.
- Social bookmarking networks like Delicious, Bib Sonomy, Reddit, Digg, Pinterest etc.
- Peer-review services like F1000 Prime
- Collaboratively edited online encyclopaedias like Wikipedia

Data from these sources are subject to different forms of analysis. (Torres-Salinas *et al*, 2013)

Given Below is The Table Explaining the Categories of Almetrics with Description of The Ways Usage Statistics is measured

Table 1: Categories of Almetrics

Viewed	The number of times the research paper is being viewed, typically its HTML views and PDF views.
Saved	Number of times a research paper or page is being saved and bookmarked based on the assumption that only highly relevant articles or pages are bookmarked or saved.
Discussed	Discussion of the research described in an article ranging from a short comment shared on twitter to more in-depth comments on blog postings.
Recommended	Endorsing the research article via a platform such as an online recommendation channel like YouTube.
Cited	Number of times citation received in the scholarly literature indexed by Scopus, Web Of Science, Cross Ref and others.

Source: Lin and Fenner (2016) and Wikipedia

3.1 How Almetrics Data is Collected?

Almetrics are provided by various platforms called altmetric providers or aggregators. They provide public APIs across platforms (sources mentioned above) to gather data with open scripts and algorithms. They differ in their strategies of collecting data, some use their own data, and others reuse their previously collected data. Thus they are divided into primary, secondary and tertiary aggregators.

Table 2: Types of Aggregators

Type of Aggregators	Examples
Primary Aggregators	Altmetric.com and ALM
Secondary Aggregators	Impact story, Kudos, Plum Analytics and Webometric Analyst
Tertiary Aggregators	Snowball Metrics

Altmetric.com is a data science company that tracks altmetric data from different sources of data like news, videos, policy documents, Facebook, Twitter, LinkedIn, and Pinterest resulting in single indicator called “altmetric donut” represented by different colours. Its goal is to provide its customers information about the attention a single article receives. They also offer free tools for use by researchers, institutions, and the public. Their most popular tool is Bookmark let which can be added to any browser and help track impact of the research.



Fig 1: Altmetric Donut

Source: <https://www.altmetric.com>

ALM: Article level Metrics is an initiative of the PLoS, (Public Library of Science, a non-profit open access publisher) launched in 2009, for the research articles published underneath. It provides different impact and performance indicators accessible through APIs and widgets for free download. In the upper right-hand corner of an article's page, the number of saves, page views, downloads, citations, and social media shares can be viewed.

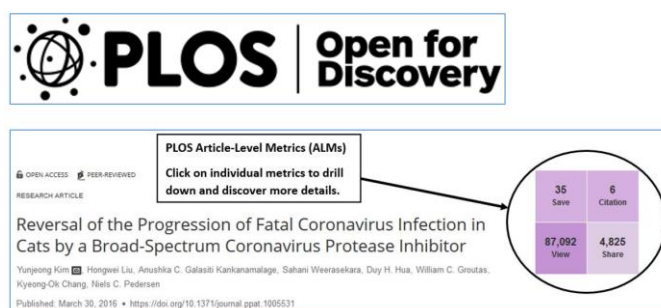


Fig 2: Example of PLOS Article-Level Metrics (ALMs)

Impact Story: It is a non-profit organisation launched in 2011. It is now an open source, web based tool. It allows one to set a free profile using twitter account and then sync with the ORCID ID. Impact story provides its users 5 categories for social outreach: cited, saved, discussed, viewed, and recommended. Since 2014, Impact story is paid service.

Kudos: It is a web-based service started in 2013. It aggregates all the most metrics in one place including usage statistics, citation data from Web of science and Altmetric Data. It is free for Individual researchers.

Plum Analytics: It was launched in the year 2011 and then later in 2014, it became a part of EBSCO Information services. It also covers 4 categories of data: usage, captures, mentions, social media and citations. It joined Elsevier in 2017.

Webometric Analyst: It is free software gathers data from different sources, process them and create network diagram of collection of websites or ideas. It also retrieve information about blogs and you tube videos.

Snowball Metrics: It is owned by research-intensive universities around the globe. The universities involved are following the recommendations outlined by the sector in the 2010 report on research information management, and collaborating with an industry supplier of research information, Elsevier, to ensure that the methodologies are technically feasible to them.

4. Pros and Cons of Altmetrics

4.1 Pros of Altmetrics

- i) It is a simplest and effective way of understanding who is engaging with one's research online and their thoughts on it.
- ii) Altmetrics complements traditional metrics as it goes beyond citation based metrics and covers wide range of sources as books, blogs, facebook postings, tweets etc.
- iii) It allows users to get quick feedback on the number of times their research is being viewed or downloaded by users in different sources.
- iv) It helps monitor and collate mentions of work online as soon as it's published.
- v) It help gauge the measure of one's research beyond the scholars as it is referred by professionals, students, interested general public.
- vi) Altmetrics can be used to benchmark the influence of one's research against the peers in the field thereby helping to assess and manage one's reputation globally.
- vii) It also provides opportunities to researchers to discuss their work-in-progress and unpublished articles.
- viii) Due to Altmetrics, researchers are sharing their data, presentation, software and other scholarly work online more than before.
- ix) Altmetrics providers pull their data from open sources which makes data more easily replicable than data in proprietary databases.

4.2 Cons of Altmetrics

- i) Altmetrics are alternative metrics and not replacement to traditional metrics like journal based citation and peer view. It doesn't give the one stop whole picture of research impact.
- ii) Alternative metrics look at how many times research is used or mentioned but not at the context. As a result the value of research cannot be fully determined.
- iii) Altmetrics may not be a valid measure of scholarly impact as its data can be compromised or subject to gaming by soliciting favours from close kin's likes or shares on social media to promote one's impact of research.
- iv) Another con is the lack of correlation between altmetric and bibliometric data. There is no conclusive research to support the correlation also.
- v) Altmetrics are relatively new field, more research in to their use is required.
- vi) It lack inclusiveness as it do not include data from all digital media platforms.

vii) There is a perception that the articles high mention on social media is more of general topic rather than scientific research.

viii) Altmetrics fail to collect data from sources not using DOI (Digital object Identifier) from blog post or tweets.

5. Role of Librarian in Promotion of Altmetrics

As per the White Paper on Altmetrics (NISO, 2014) libraries and librarians have the necessary qualification to train and disseminate the appropriate use of altmetrics to promote the global academic community, the impact, the attention and the value of the research produced in their institutions.

Librarians are already familiar with the acquisition, promotion and training of bibliometric tools so it's quite understandable for the librarians to expand their horizon to encompass altmetrics too. Given below are the areas in which librarians are supporting altmetrics:

i) Acquisition, Evaluation and Access of Altmetrics Tools:

Few of the altmetric tools are subscription based and require backend support to operate at the institutional level, the librarian who are already been doing the same duties for the subscription of E-resources and bibliometric tools like Scopus, web of science etc., need to expand the same duties for the Altmetric tools too.

ii) **Training and Marketing:** Librarian due to the complex nature of altmetrics need to have a proper plan to guide researchers on its usage. Researchers need to be properly guided on the different tools and its implications on their research. Librarians mostly prepare research guides or handouts especially for this purpose. Apart from these, one-on-one personal interaction, online tutorials, online instructional videos etc., on websites etc. can be employed by the librarian to enhance altmetric tools usage.

iii) **Communication and Promotion:** Librarian has to cater to different information needs and requirements of several stake holders within the institution be it students, teachers, researchers, administrator, publishers, aggregators, vendors etc. This kind of association with all, enable librarian to have open communication with them promoting the relevance and importance of Altmetrics. Let us see how librarian can play a major role in communicating the importance of Altmetrics to them as follows:

a) **Teachers and Researcher:** Apart from making aware and understanding of altmetrics to teachers and researchers, librarian can help encourage them to use this tool for the purpose of promotion, merit, award, sponsorship and funding of their research.

b) **Students:** They are the prospective researcher and are exposed to researchers and research techniques. Hence the students can be effective advocates for altmetrics tools and principles.

c) **Administrators:** They are the decision makers involved in decision making pertaining to fund allocation, promotion etc. A clear understanding of altmetric tools is necessary to arrive at appropriate decision.

d) **Publishers and Vendor:** Librarians need to provide timely feedback to publishers and vendors based on own observations as well as the requirements of the researchers. Encouraging practices like the creation of article-level metrics or inclusion of altmetric donut can help researcher to measure their research. Sage is

one such publisher who implemented article-level metrics in its journals.

- iv) **Collection Development:** Librarian are using almetric-based data to evaluate and measure the journal usage and its standing in the research arena. They are using tools to classify journal, analyses the data and create custom reports.
- iv) **Integration with Library Tools:** Librarians are integrating Almetrics tools with the existing library resources like institutional repository to encourage researchers to have easy access to metrics which otherwise is not easy to get. Additionally librarian are using metrics to evaluation of their own institutional repository. Recently Almetrics tools are also incorporated into discovery system tools.
- v) **Scholarly Research:** Librarian are also contributing to the scholarly output of altmetrics. Since they are already involved in the training, awareness, usage and evaluation of altmetrics, it makes them more capable enough explore new dimensions and write in-depth research on it. Librarian were already contributing lots of research on bibliometric. Altmetrics came as a natural extension.
- vi) **Self-Evaluation:** Librarians are also researchers they are also using the Almetric tool to self-examine the impact of their research amongst their peer professionals.
- vii) **To Stay Updated:** Librarian are using Altmetric tools to stay updated by using following methods:
 - a) **Customized Google News:** Google news, one of the service of Google, can be used to generate customised news alert with an Altmetrics focus. On a similar lines, RSS feed can also be created.
 - b) **Google Scholar Alert:** It can also be customised and alert can be sent via email on specific topics like Almetrics and libraries etc based on specific interests.
 - c) **Scholarly Blogs:** They serve a major role in academia by providing news, opinion and analysis on different aspects of academia, with some specializing on particular aspects and some on broader aspect. Therefore these blogs have covered altmetry's information, trends and applications to academic research in a meaningful way.
- ix) **Presentations, Workshops and Invited speakers:** Apart from above activities, librarian need to conduct conferences, workshops and invite speakers from the field of altmetrics like Altmetric tool providers, Special organisations interested in altmetrics etc at the institutional level to enlighten on altmetrics. For eg. The UW libraries have partnered with the college of the Environment to invite cofounders of Impactstory (almetric tool provider) to their institution to speak about altmetrics.

Conclusion

Altmetrics is relatively new field but it continues to be uncertain with changes occurring in it almost every day. Its future implications cannot be ignored and underplayed. Librarians have a major role to play in imparting awareness and training to the researchers for their academic impact, communication and intellectual diversity.

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